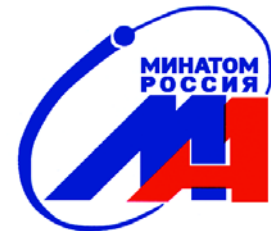




# 10 Years of Transparency under the U.S.-Russian HEU-LEU Agreement



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# Overview



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- 10th Anniversary of HEU Transparency Protocol to the HEU-LEU Agreement
  - Contents of Transparency Protocol
  - Negotiating Strategy for Transparency
  - Major Transparency Objectives Achieved at Recent Transparency Review Committee (TRC) Meetings
    - *9<sup>th</sup> Session: BDMS installation at Electrochemical Plant (ECP)*
    - *10<sup>th</sup> Session: BDMS installation at Siberian Chemical Combine (SChE)*
  - Sept/Oct 2003 SMV and Russian Familiarization Visit to Paducah Gaseous Diffusion Plant
  - Negotiation of a New Transparency Annex
    - *11<sup>th</sup> Session of the TRC: Annex signed for Paducah Gaseous Diffusion Plant since transfer of operations from Portsmouth*



# Tenth Anniversary of HEU Transparency Protocol

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- On February 18, 1993, the United States and Russian Federation signed the historic HEU-LEU Agreement. The U.S. agreed to purchase 500 metric tons of HEU from dismantled Russian nuclear weapons, in the form of 15,000 metrics tons of LEU, for use as reactor fuel for U.S. commercial power reactors.
- On March 18, 1994, the sides signed a Protocol on HEU Transparency Arrangements establishing transparency measures to assure that the nonproliferation objectives of the Agreement are met.



# Transparency Under the HEU-LEU Agreement

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- Transparency provides confidence that:
  - *HEU extracted from dismantled Russian nuclear weapons is converted and downblended to LEU*
  - *The LEU shipped to the United States is fabricated into fuel for commercial nuclear reactors*
- These measures support U.S. and R.F. nonproliferation policy initiatives to irreversibly eliminate excess weapons-usable HEU for peaceful purposes.
  - *Converting excess HEU to LEU to fuel U.S. commercial power reactors provides both nonproliferation and economic benefit to the United States and Russia*



# Contents of the HEU Transparency Protocol

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- **Contents of the HEU Transparency Protocol:**
  - *Article 1: Purpose (Ensuring the nonproliferation objectives of the Agreement are met)*
  - *Article 2: Implementation (Provides means to promote Agreement objectives and established the TRC)*
  - *Article 3: Transparency Measures (Established general access rights to processes and material and specified U-235 content as a major measurement parameter)*
  - *Article 4: Procedures (Directed the parties to develop detailed procedures for each facility within the TRC)*
  - *Article 5: Entry into Force and Amendment (EIF upon signature; provided procedure for amendment and stop-delivery process, and allowed deliveries of LEU to begin)*

# Annexes to the Protocol

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- **17 Technical Implementing Annexes to the Protocol have been signed and amended over the course of the Agreement**

*Annex 1: TRC*

*Annex 2: Notification of Visits and Related Arrangements*

*Annex 3: Monitoring Procedures at UEIE*

*Annex 4: Monitoring Procedures at PORTS*

*Annex 5: Monitoring Procedures at SChE*

*Annex 6: Monitoring Procedures at US Fuel Fabricators*

*Annex 7: Analytical Methods for Determining U Content and Assays*

*Annex 8: Tags and Seals*

*Annex 9: Technological Process Descriptions*

*Annex 10: Financial Arrangements for Transparency Activities*

*Annex 11: Re-Export of Russian LEU from USA*

*Annex 12: Equipment*

*Annex 13: Radioactive Standards*

*Annex 14: Exchange of HEU Material Reports*

*Annex 15: Monitoring Procedures at ECP*

*Annex 16: Monitoring Procedures at MPA*

*Annex 17: Monitoring Procedures at PGDP*



# Negotiating Strategy for Transparency

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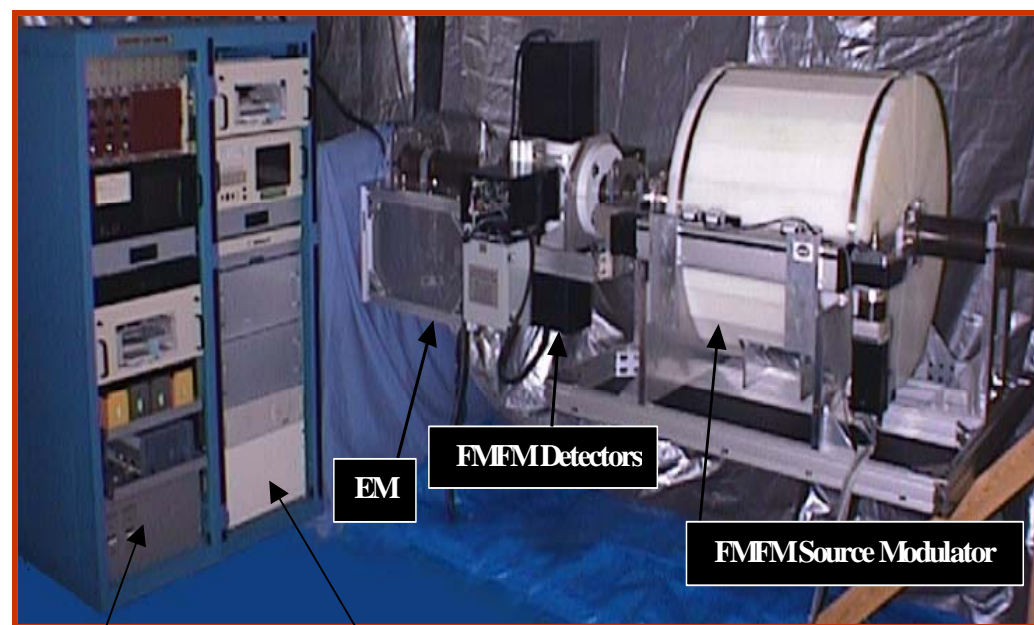


- **Declare facilities involved in processing and/or process changes at declared facilities**
- **Provide process description**
- **Conduct familiarization visit(s) to each new facility**
- **Each side determines which transparency measures it needs (based on process description and familiarization visit) to provide confidence that transparency goals are met**
- **Convene TRC to negotiate or update transparency annex**
- **Implement monitoring visits in accordance with transparency annex for the facility**

## Recent Transparency Accomplishments at TRC Meetings

- **First Blend Down Monitoring System (BDMS) installed at the Ural Electrochemical Integrated Enterprise (UEIE) in 1999.**
  - *This monitored half of the total HEU downblending each year.*
- **Ninth Session of the TRC in November 2002: the sides reached agreement to install BDMS at the Electrochemical Plant (ECP) in Zelenogorsk.**
  - *BDMS currently monitors 2/3 of HEU downblending each year.*

BDMS for one Leg of Blending Tee



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## Recent Transparency Accomplishments (cont.)

- Tenth Session of the TRC in August 2003: the sides reached agreement to install BDMS at the last of three downblending facilities subject to the Agreement at the Siberian Chemical Enterprise (SChE) in Seversk.
  - *BDMS will now monitor all 30 metric tons of downblended HEU each year.*
- BDMS role in transparency will be fully implemented with installation at SChE.
  - *Installation scheduled for October 2004*



# September 2003 Russian Special Monitoring Visit (SMV)

- Exercising Russian rights to conduct monitoring visits to fuel fabricators to ensure peaceful use of material, a Russian delegation conducted an SMV to Westinghouse (Columbia, SC) and Framatome (Lynchburg, VA) in September 2003.



# October 2003 Russian Familiarization Visit to Paducah, Kentucky

- Since processing operations subject to the Agreement had been transferred from Portsmouth to Paducah in 2002, the Russian side conducted a familiarization visit (FV) to the Paducah Gaseous Diffusion Plant (Paducah, KY) to familiarize themselves with plant operations.
- This FV was in preparation for negotiations on a transparency annex for that facility.







## Negotiation of a New Annex



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- **Following the October 2003 Familiarization Visit to the Paducah Gaseous Diffusion Plant, the U.S. and Russian sides developed and exchanged a draft transparency annex for Paducah.**
  - **Eleventh Session of the TRC in April 2004: the sides negotiated and signed a transparency annex for Paducah since the transfer of operations from Portsmouth.**